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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,110	10/26/2006	Takashi Mizutani	126737	5423
27049	7590	11/29/2009		
OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850			EXAMINER ORLANDO, AMBER ROSE	
			ART UNIT 1797	PAPER NUMBER
			NOTIFICATION DATE 11/20/2009	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction27049@oliff.com  
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# Office Action Summary

**Application No.**

10/565,110

**Applicant(s)**

MIZUTANI, TAKASHI

**Examiner**

AMBER ORLANDO

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 July 2009.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 and 2 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 19 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/GS/US)  
4) ☐ Interview Summary (PTO-413)  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_  
Paper No(s)/Mail Date \_\_\_\_\_

### DETAILED ACTION

This action is in response to the correspondence filed 07/07/2009.

Claims 3 and 4 have been cancelled.

Claim 1 has been amended.

Claims 1 and 2 are rejected.

Claims 1 and 2 are pending and have been examined.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno et al. WO2001/023069 (translation provided by US 6,669,751) in view of Ketcham et al. US 6,673,414.

4. For claim 1, the Ohno et al. reference discloses a ceramic filter comprising: honeycomb segments bonded together (figure 2 objects F1 and 15), being partitioned

by porous walls, and having vents for exhaust gas to flow there through from an inlet to an outlet in a longitudinal direction, wherein each of the honeycomb segments includes first vents and second vents alternately placed, wherein the first vents are filled at the inlet and are open at the outlet, wherein the second vents are open at the inlet and are filled at the outlet, wherein each of the honeycomb segments has at the inlet an end surface having a central portion and a peripheral portion enclosing the central portion (figure 4 objects, 9, 9a, 9b and 12-14). The reference does not disclose the second vents in the central portion are additionally filled at the inlet, wherein the central portion is larger in vent-filling percentage than the peripheral portion at the inlet, and the central portion has an additional filling percentage set within a range of 0.1 to 10 % to a total area of an end surface of each honeycomb segment at the inlet.

5. The Ketcham et al. reference discloses the second vents in the central portion are additionally filled at the inlet, wherein the central portion is larger in vent-filling percentage than the peripheral portion at the inlet (figures 2-4 objects 30, 32, 33 and 35) and the central portion has an additional filling percentage (figures 2-4 and column 3, lines 1-17). The reference does not explicitly state the additional filling percentage set within a range of 0.1 to 10 % to a total area of an end surface of each honeycomb segment at the inlet. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the reference to include within a range of 0.1 to 10 % to a total area of an end surface of each honeycomb segment at the inlet, since it has been held that where the general conditions of a claim are

disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

6. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ohno et al. reference so that the second vents in the central portion are additionally filled at the inlet, wherein the central portion is larger in vent-filling percentage than the peripheral portion at the inlet (Ketcham et al. figures 2-4 objects 30, 32, 33 and 35) and the central portion has an additional filling percentage set within a range of 0.1 to 10 % to a total area of an end surface of each honeycomb segment at the inlet (Ketcham et al. figures 2-4 and column 3, lines 1-17) in order to minimize the thermal damage to the filter, while maximizing the filters removal capacity.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno et al. WO2001/023069 (translation provided by US 6,669,751) and Ketcham et al. US 6,637,414 as applied in claim 1 above, and further in view of Kasai et al. US 2005/0138908.

8. For claim 2, the Ohno et al. reference does not disclose the central portion has an additional filling percentage set on the condition that increase percentage of pressure loss of the entire filter, increasing with an amount of additional filling, is a predetermined value or less and that decrease percentage of the maximum temperature during.

9. The Ketcham et al. reference discloses the central portion having additional filling percentage (figure 2 objects 30, 32 and 33), and that decrease percentage of the

maximum temperature during burning of soot accumulated in the filter (column 6, lines 41-45). The reference does not explicitly state setting a specific decrease percentage of the maximum temperature. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the reference to include the decrease percentage of the maximum temperature being a predetermined value or more, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

10. The reference does not explicitly state the additional filling percentage set on the condition that increase percentage of pressure loss of the entire filter, increasing with an amount of additional filling, is a predetermined value or less. It is well known in the art to modify the amount of vent plugs to determine the optimum filtering efficiency when compared to the least amount of pressure loss (Kasai et al. paragraph [0040]) since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

11. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ohno et al. reference to include the central portion having an additional filling percentage set on the condition that increase percentage of pressure loss of the entire filter, increasing with an amount of additional filling (Ketcham et al. figure 2, objects 30, 32 and 33 and Kasai et al. paragraph [0040]), is a predetermined value or less and that decrease percentage of the maximum

temperature during burning (Ketcham et al. column 6, lines 41-45) in order to minimize the thermal damage to the filter, while maximizing the filters removal capacity.

***Response to Arguments***

12. Applicant's arguments filed 07/07/2009 have been fully considered but they are not persuasive.

13. For claim 1 the Applicant argues that there are unexpected results when the central area has an additional filling percentage set within a range of 0.1 to 10% to a total area of an end surface. Specifically this causes a decrease in the maximum temperature percentage, while the pressure loss remains relatively small.

14. It is well known in the art at the time the invention was made that one could modify the honeycomb structure's plug proportions to obtain lower maximum temperatures and smaller pressure losses. See Pitcher 4,417,908 column 5, lines 62 - column 6, lines 2 and Ksai et al. US 2005/0138908 paragraph [0040] shows that the pressure loss is controlled by the plugs, and Beall et al. US 6,541,407 column 6, lines 10-15 which shows that the heat capacity is controlled by the number and depth of ceramic plugs (when the heat capacity increases the maximum temperature within the honeycomb decreases). Therefore it would be well within the knowledge of a skilled artisan to modify the plugging amount to adjust the pressure loss and maximum temperature, and showing that the central area has an additional filling percentage set within a range of 0.1 to 10% to a total area of an end surface does not produce unexpected results.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMBER ORLANDO whose telephone number is (571)270-3149. The examiner can normally be reached on Mon.-Thurs. (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AO

/Walter D. Griffin/  
Supervisory Patent Examiner, Art Unit 1797